

# THOR-LX / HIIr Preparation and Use

## 2.1 General

### 2.1.1 Hardware and Fasteners

All hardware and fasteners used on the THOR-LX / HIIr unit are standard English sizes. Depending on the function of a specific assembly, the thread sizes may be UNC or UNF in sizes ranging from 0-80 to 3/4". The following abbreviations are used throughout this manual.

#### SCREW ABBREVIATIONS:

F.H.S.C.S.	FLAT HEAD SOCKET CAP SCREW
B.H.S.C.S.	BUTTON HEAD SOCKET CAP SCREW
S.H.C.S.	SOCKET HEAD CAP SCREW
S.S.S	SOCKET SET SCREW
N.P.	NYLON PELLETT (USED IN CONJUNCTION WITH ONE OF THE ABOVE ABBREVIATIONS)

#### MATERIAL ABBREVIATIONS:

CRS	COLD ROLLED STEEL
SS	STAINLESS STEEL
AL	ALUMINUM

### 2.1.2 Tools Required

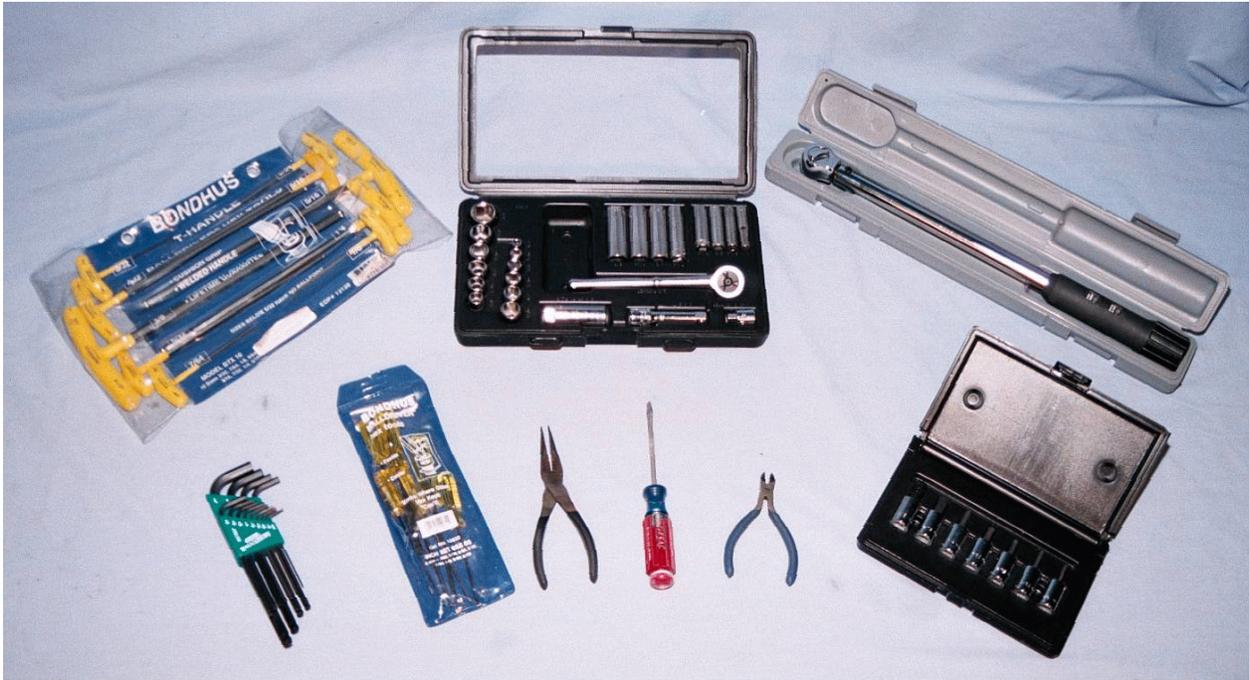
The following tool list includes the recommended standard tools which should be available

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**WARNING: REUSING NYLON PELLETT BOLTS GREATLY DIMINISHES THEIR EFFECTIVENESS TO RESIST LOOSENING.**

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at the test labs using the THOR-LX / HIIr equipped dummy. This list will allow the user to make any necessary adjustments and to perform a through disassembly and assembly procedures. These tools are shown in **Figure 2.1**.



**Figure 2.1-** Required tools

- Set of T Handle Hex Wrenches (Ball End) Size: 3/32" to 3/8"
- Set of L Handle Hex Wrenches (Ball End) Size: 0.050" thru 3/8"
- Set of Straight Hex Wrenches (Screwdriver Style) Size: 0.050" thru 3/8"
- Socket Set 1/4" Drive Size: 1/4" thru 3/4"  
1/4" thru 5/8" Deep
- Torque Wrench Range: 5 to 80 ft-lb
- Hex Bit Socket Set Size: 5/32" to 3/8"
- Needle Nose Pliers
- Diagonal Cutters
- Flat Head Screwdriver

**2.1.3 Bolt Torque Values**

The following table indicates the recommended torque values for the various bolt sizes used in the THOR-LX / HIIIr unit assemblies.

Bolt Size	Torque Range (Ft-lb)	Torque Range (N-m)
#4	10 to 16 (in-lb)	1.1 to 1.75
#6	19 to 29 (in-lb)	2.1 to 3.25

#8	2.5 to 3.8	3.4 to 5.1
#10	3.5 to 5.3	4.75 to 7.2
1/4	7 to 9	9.5 to 12
5/16	13 to 15	17 to 20
3/8	29 to 31	39 to 42

For bolt sizes smaller than those listed, common sense should dictate a reasonably snug torque which will prevent the fastener from vibrating loose during impact.

## 2.2 THOR-LX / HIIr Main Assembly Serial Number

Each completed THOR-LX / HIIr assembly is issued a main assembly serial number which is used to track the completed assembly through testing and calibration. A numbered adhesive sticker is affixed to the tibia assembly of each THOR-LX / HIIr unit to provide this main assembly serial number. This main assembly serial number should be used as a reference during any correspondence regarding the use of this unit.

## 2.3 Part Numbers & Serial Numbers

Each major component of the THOR-LX / HIIr unit is marked with a part number which is identical to the drawing number of the part in the drawing package. Exceptions to the marked serial numbers include very small components and rubber washers and bumpers. These part numbers will be referred to throughout the user's manual to aid in the disassembly, inspections, calibration, repair and assembly of any of the THOR-LX / HIIr components.

In addition to the part numbers, several of the assemblies are given a serial number which is used to identify and track the manufacture and distribution of the parts. The following sub-assemblies are assigned unique serial numbers, which are marked on the parts at the time of manufacture, these serial numbers can be used to trace various parameters of the manufacturing process including date, chemical batch numbers, etc. The following table lists the assemblies and parts which have been marked with a serial number.

**Parts Marked with Serial Numbers**

Part Name	Part Number - Drawing Number
Tibia Shin Guard	T1LLM014
Knee Bumper	T1LLM026

D/P Joint Soft Stop	T1AKM002
I/E Joint Soft Stop	T1AKM004
Tibia Compliant Element Assembly	T1LLM400

## 2.4 Additional Reference Materials:

The following reference materials are available from the manufacturer and at the NHTSA website to provide specific information about various aspects of the THOR-LX / HIIIr performance and operation.

*THOR-LX / HIIIr Drawing Package* - This drawing package - in AutoCAD V. 2000 - is available for all users of the THOR-LX / HIIIr from both the manufacturer and at the NHTSA website ([www-nrd.nhtsa.dot.gov/departments/nrd-51/thor\\_LX/Thorlxweb.html](http://www-nrd.nhtsa.dot.gov/departments/nrd-51/thor_LX/Thorlxweb.html)).

*Serial Number Reference Sheet* - This data sheet provides serial number information on various THOR-LX / HIIIr components to allow performance tracking. This information is available from the manufacturer.

*THOR-LX / HIIIr Calibration Sheets* - These sheets contain all of the calibration information for the THOR-LX / HIIIr instrumentation. This information is available from the manufacturer.

*THOR-LX / HIIIr Certification Procedures and Requirements Document* - This document, which details the performance and calibration procedures for the *THOR-LX / HIIIr* assembly - is available for all users of the THOR-LX / HIIIr from both the manufacturer and at the NHTSA website.